Claims

What is claimed is:

1. A method of decoding a frame of an encoded stream of video frames, said method comprising:

forwarding an encoded stream of video frames to multiple decode processes in parallel;

decoding at least one frame of the encoded stream of video frames employing the multiple decode processes; and

wherein for each frame of said at least one frame, each decode process of the multiple decode processes selects and decodes a respective portion of the frame, and wherein cumulatively the respective portions decoded by the multiple decode processes comprise the entire frame.

2. The method of claim 1, wherein for each frame of said at least one frame, each decode process of said multiple decode processes discards portions of the frame being decoded outside of its respective portion to decode.

3.   The method of claim 1, wherein said forwarding comprises forwarding the encoded stream of video frames to the multiple decode processes in parallel without preprocessing the encoded stream of video frames to facilitate decoding thereof by the multiple decode processes.

4.   The method of claim 3, wherein said decoding the at least one frame of the encoded stream of video frames by the multiple decode processes occurs in realtime in a single pass of each frame through the multiple decode processes.

5.   The method of claim 1, wherein the multiple decode processes comprise multiple decoders connected in parallel, each decoder comprising a standard definition decoder, and wherein the encoded stream of video frames comprises a high definition signal to be decoded.

6.   The method of claim 1, wherein said decoding the at least one frame comprises decoding each frame of the encoded stream of video frames employing the multiple decode processes.

7.   The method of claim 1, further comprising exchanging motion overlap data between decode processes of the multiple decode processes decoding adjacent respective portions of the frame.

8.   The method of claim 7, wherein said exchanging occurs upon decoding the frame when the frame comprises an I frame or P frame.

9.   The method of claim 8, further comprising storing by each decode process its respective portion of the decoded frame when the frame comprises an I frame or P frame.

10.   The method of claim 7, wherein said exchanging further comprises synchronizing processing between said multiple decode processes.

11.   The method of claim 1, wherein said decoding comprises parsing by each decode process, the encoded stream of video frames to extract time and control information from headers contained therein for subsequent use in decoding the respective portion of the frame.

12.   The method of claim 11, wherein the respective portion of the frame decoded by each decode process comprises a respective number of macroblock rows of the frame, and wherein each decode process automatically determines which macroblock rows of said frame comprise its respective portion of the frame to be decoded.

13.   The method of claim 1, wherein said decoding comprises sequentially decoding by the multiple decode processes their respective portions of the frame as the encoded stream of video frames passes through the multiple decode processes.

14. The method of claim 13, further comprising outputting from the decode processes their respective decoded portions of the frame to a display buffer, said display buffer facilitating display of the entire decoded frame.

15. A system for decoding a frame of an encoded stream of video frames, said system comprising:

    means for forwarding an encoded stream of video frames to multiple decode processes in parallel;

    means for decoding at least one frame of the encoded stream of video frames employing the multiple decode processes; and

    wherein for each frame of said at least one frame, each decode process of the multiple decode processes comprises means for selecting and for decoding a respective portion of the frame, and wherein cumulatively the respective portions decoded by the multiple decode processes comprise the entire frame.

16. The system of claim 15, wherein for each frame of said at least one frame, each decode process of said multiple decode processes comprises means for discarding portions of the frame being decoded outside of its respective portion to decode.

17. The system of claim 15, wherein said means for forwarding comprises means for forwarding the encoded stream of video frames to the multiple decode processes in parallel without preprocessing the encoded stream of video frames to facilitate decoding thereof by the multiple decode processes.

18. The system of claim 17, wherein said means for decoding the at least one frame of the encoded stream of video frames by the multiple decode processes occurs in realtime in a single pass of each frame through the multiple decode processes.

19. The system of claim 15, wherein the multiple decode processes comprise multiple decoders connected in parallel, each decoder comprising a standard definition decoder, and wherein the encoded stream of video frames comprises a high definition signal to be decoded.

20. The system of claim 15, wherein said means for decoding the at least one frame comprises means for decoding each frame of the encoded stream of video frames employing the multiple decode processes.

21. The system of claim 15, further comprising means for exchanging motion overlap data between decode processes of the multiple decode processes decoding adjacent respective portions of the frame.

22. The system of claim 21, wherein said means for exchanging occurs upon decoding the frame when the frame comprises an I frame or P frame.

23. The system of claim 22, further comprising means for storing by each decode process its respective portion of the decoded frame when the frame comprises an I frame or P frame.

24. The system of claim 21, wherein said means for exchanging further comprises means for synchronizing processing between said multiple decode processes.

25. The system of claim 15, wherein said means for decoding comprises means for parsing by each decode process, the encoded stream of video frames to extract time and control information from headers contained therein for subsequent use in decoding the respective portion of the frame.

26. The system of claim 25, wherein the respective portion of the frame decoded by each decode process comprises a respective number of macroblock rows of the frame, and wherein each decode process comprises means for automatically determining which macroblock rows of said frame comprise its respective portion of the frame to be decoded.

27. The system of claim 15, wherein said means for decoding comprises means for sequentially decoding by the multiple decode processes their respective portions of the frame as the encoded stream of video frames passes through the multiple decode processes.

28. The system of claim 27, further comprising means for outputting from the decode processes their respective decoded portions of the frame to a display buffer, said display buffer facilitating display of the entire decoded frame.

29. A system for decoding a frame of an encoded stream of video frames, said system comprising:

a host interface for receiving and forwarding an encoded stream of video frames;

multiple decoders connected in parallel for decoding at least one frame of the encoded stream of video frames; and

wherein said host interface forwards the encoded stream of video frames simultaneously to said multiple decoders, and wherein for each frame of said at least one frame, each decoder selects and decodes a respective portion of the frame, and wherein cumulatively the respective portions decoded by the decoders comprise the entire frame.

30. At least one program storage device readable by a machine, tangibly embodying at least one program of instructions executable by the machine to perform a method of decoding a frame of an encoded stream of video frames, comprising:

forwarding an encoded stream of video frames to multiple decode processes in parallel;

decoding at least one frame of the encoded stream of video frames employing the multiple decode processes; and

wherein for each frame of said at least one frame, each decode process of the multiple decode processes selects and decodes a respective portion of the frame, and wherein cumulatively the respective portions decoded by the multiple decode processes comprise the entire frame.

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